GASTRODUODENAL ULCER; SYMPTOMATOLOGY AND DIAGNOSIS.*

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The therapeutic results of surgical intervention in affections of the stomach, the frequent opportunity we now have to control our clinical findings autopically, have led to a complete revision of even recent teachings on gastric and duodenal ulcerations. The French clinician Soupoult was the first one to consider pain occurring three or four hours after feeding combined with the periodicity of symptoms as characteristic for ulceration involving the pylorus; in 23 cases operated on by Hartman he was able to prove his contention: In all cases ulcer either involving the pylorus or located just above or below the pylorus was found.

It remained, however, for Moynihan to popularize this view based on the overwhelming evidence of a great many cases treated by surgical means. According to his enormous experience the diagnosis should be based on the history of the case. Hunger-pain and periodicity which, if typical, he considers sufficient proof even in the absence of physical symptoms. The anamnesis is everything, the physical examination nothing, as he expresses it.

The most characteristic symptom of duodenal ulceration is pain which appears when the patient begins to feel hungry in a definite space of time, which varies according to the character and the consistency of the food. Usually it appears at 11 a.. m., 4 p. m. and if sufficiently severe awakens the patient at about 2 a. m. Most patients know that their pain is almost immediately relieved by eating; a glass of milk or some crackers taken at the time of the paroxysm insure a few hours' relief. Moynihan characterized these complaints as "hunger pain," a term which has been generally accepted.

The second symptom of duodenal ulcer is furnished by the periodicity of the attack. At the beginning of the affection periods of pain occur separated by months and even years of complete relief, during which the patient believes himself completely relieved and partakes with impunity of all varieties of food. As the disease progresses the "interval periods" become shorter and shorter, until finally the patient is in almost uninterrupted pain.

Ten years have elapsed since this symptom complex has made the diagnosis of duodenal ulcer a comparatively easy one. In a great many cases the accuracy of Moynihan's contention has been verified and the diagnosed ulceration been found autopically. In other cases, however, in spite of characteristic history no ulceration could be discovered, while in other cases the presence of an ulceration failed to reveal itself by any symptoms or caused phenomena which did not possess any of the characteristics emphasized by Moynihan.

In the discussion we will first try to analyze the symptomatology of ulceration at or immediately above or below the pylorus. It is with full intention that I have failed to observe the usual division into duodenal and gastric ulceration for the following reasons: In the cases I observed personally I have failed to see any clinical difference between the symptoms produced by gastric, pyloric and duodenal ulcerations, as long as they were located immediately near the pylorus and interfered with its normal action, an opinion in which I concur with Soupoult and Kemp. On the other hand the distinction between gastric and duodenal ulceration is usually drawn according to the position of the pyloric vein. Anatomical investigation done by Ferrari shows, however, that in only four out of 16 cases the pyloric vein was located at the pylorus, while in the other 12 cases there was a difference of 1.5 to 4 cm. on either side of the pylorus.

The following conclusions are drawn from my own material: Out of about 160 cases in the last six years, only 46 could be utilized for statistical purposes, having been observed by me clinically for periods of from six months to several years. In the other cases the diagnosis could not be considered as sufficiently founded either because they did not present a sufficiently complete symptomatology or because they were seen only once or twice in consultation.

The periodical occurrence of symptoms was observed in 43 out of 46 cases, no matter whether they were located at the pylorus or in the body of the stomach, this being contrary to the opinion of Moynihan, who claims that the periodicity is one of the most important characteristics of duodenal ulceration. I have seen the alternation of painful period with complete absence of symptoms in two cases of ulceration of the lesser curvature, and in one case in which a scar was found in the fundus along the greater curvature.

Periodicity of symptoms can manifest itself in other pathological conditions of the stomach, especially in cases of atony with general enteroptosis. While these cases are easily distinguished from ulceration a differential diagnosis of chronic appendicitis with periodical symptoms may be surrounded by a great many difficulties. Under these conditions appendicitis produces the symptoms of hyperacidity which during the attacks combines itself with pylorospasm. If the vomitus is mixed with blood as I have seen it in two cases the differential diagnosis becomes almost impossible. However, in both these cases complete recovery followed the removal of the appendix.

Hunger-pain was present in 41 cases out of 46. Twice it was missed in duodenal ulceration operated on account of obstructive symptoms. One was a case of several years' standing, and in the other one the disease revealed itself outside of some vague dyspeptic symptoms of short duration by a big hemorrhage through the bowels and tonic contractions of the antrum, which could be seen on inspection. Operation revealed ulceration of the duodenum adjoining the pylorus.

Hunger-pain was present in two cases of gastric hyperacidity without ulceration and very little reliance can be placed on it unless it is combined with a number of other characteristic signs.

Hæmatemesis or passing of blood through the

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stools is the most frequent symptom of ulceration. I hesitate to make the diagnosis of ulceration without the history or finding of blood in the excretions. Out of 46 cases it was found in 36; amongst the negative cases are several in which the observation was not sufficiently extensive, as operation had to be hurried.

The differentiation of gastric and duodenal ulceration has often been based on the way in which the blood was excreted. Exclusively gastric hemorrhage was said to correspond to gastric origin, blood in the stools to a duodenal source. My evidence does not corroborate this opinion. Several years ago a case was observed in which two big intestinal hemorrhages took place, while on repeated examinations the stomach contents were free from blood. The diagnosis of gastric ulceration was nevertheless made, on account of the disappearance of pain on change of position, a symptom which if constant I consider pathognomic of gastric ulceration.

Bleeding from the stomach and especially hæmatemesis are by no means characteristic of ulceration. For some time Moynihan pointed out a group of cases, in which the lesion at the operation is found at the appendix and not in the stomach. Outside of small hemorrhages which follow very frequently the introduction of the stomach tube, I have seen two cases of repeated hemorrhages in which operation failed to show any lesion.

One case seen repeatedly in consultation was very typical. A lady 37 years of age had a number of hemorrhages within the last six years combined with symptoms of hyperacidity. She was first seen after several hemorrhages occurring within three days had reduced her hemoglobin to 18%. Under Lenhartz treatment the patient recovered; six months afterwards laparotomy failed to show any lesion; a gastroenterostomy was performed without any benefit to the patient; the symptoms remained unchanged and the hemorrhages recurred.

Hale White has described a number of these cases and considered them as due to vicarious menstruation, an opinion which I cannot share.

Hemorrhage due to high blood pressure can easily be differentiated from ulceration by the absence of any gastric symptoms, or any radiographic signs and the positive findings in the cardiorenal system.

Hemorrhage due to Banti's disease or cirrhotic changes in the liver should be recognized by the physical signs, revealed by a careful examination of the liver, spleen and blood.

The hemorrhage very seldom endangers the life of the patient; amongst all the cases I have seen only one died from this complication. The case, which is not included in my list, was seen in the country far away from a place where surgical intervention could be carried out. In this case the hemorrhage occurred in an ulcus which had led to an almost complete obstruction of the pylorus. I am quite sure that death was due to this complication as the stomach could not be set at complete rest. In this case an early gastroenterostomy would have saved the patient's life.

Hypersecretion is one of the most important signs of ulceration, not the hyperacidity as we read in so many text books. It may be diagnosed, if we obtain after an Ewald's breakfast more than 120 cc. of the fluid with an acidity above 80. While seen in a great many cases of gastric ulceration its occurrence can be noted in almost every case of pyloric ulceration; in a series of cases published by Kemp it occurred in 95% of the pyloric cases and only 23% of the gastric ulcerations.

Continuous hypersecretion formerly called Reichmann's disease is undoubtedly in the great majority of cases an indication of a pyloric ulceration. All the cases I have seen were due to an ulceration, although a number of cases are reported in which no lesion could be detected around the pylorus.

Inability of the stomach to empty itself within six hours or motor insufficiency of the first degree is one of the most constant symptoms of pyloric ulcerations. While occasionally met with in gastric ulcer it is almost a constant sign in pyloric lesions. While in my series of cases strict attention to this point was only paid within the last year, I have been able to demonstrate its presence in not less than 18 cases. The combination of motor insufficiency with hypersecretion is a very frequent combination in cases of pyloric ulceration and should be considered as a very definite and important step in reaching a diagnosis.

In a number of pyloric ulcerations we can observe attacks, during which every particle of food is vomited. With the food large amounts of fluid are vomited, which in a great majority of cases can be identified as pure stomach juice. If feeding is completely stopped the vomiting continues for a number of days, during which pure gastric juice is vomited in large amounts. These attacks of pylorospasm occur in the great majority of pyloric ulcerations; a typical history of vomiting large amounts of clear fluid during the night or early in the morning is one of the most constant features of a well taken anamnesis. Pylorospasm interferes very frequently with the course of the treatment; if in cases complaining of pressure and distress during the course of the treatment one introduces a stomach tube, large amounts of clear fluid intermixed with food taken on the day previous may be obtained.

Pylorospasm is very often detected by the X-ray examination of the patient; delay in emptying of the stomach from six to 24 hours notwithstanding a strong peristalsis are frequently met with. Pylorospasm is one of the most frequent symptoms of pyloric ulceration, but by no means pathognomonic. It is occasionally met with in gastric ulceration, frequently in cholelithiasis. The most pronounced case was seen in chronic appendicitis in which the vomiting of gastric juice continued for four days notwithstanding exclusive rectal feeding. Operation revealed a normal stomach, and an old obliterated appendix. Appendectomy led to complete recovery.

In a great many cases the retraction of the ulcus leads to chronic obstruction characterized by

constant retention of food over night and visible peristalsis. It occurred three times in my cases, all three were operated on, two with excellent results. One developed shortly afterwards a carcinoma on his old ulceration and died six months after his gastroenterostomy. It is in these cases that surgery obtains excellent results, from which it claims the right to deal with ulceration by surgical means, but overlooks the point that only obstruction and not the ulceration is dealt with.

Very little reliance can be placed on pressure points. Wrong localizations are frequently made and easily understood, if one accepts Head-Mackenzie's explanation of referred pain. Too much reliance on this point can lead to grave diagnostic errors as in the following case:

Mr. P., while traveling on a train on the first of February was seized with a gastric hemorrhage; he came under my care after a few days, and was put on the Lenhartz treatment. He failed to improve; a pressure point to the right of the umbilicus became more and more marked, spontaneous pain localized at this place and finally the abdominal wall became edematous. An operation performed at this time followed shortly afterwards by a post-mortem (the patient having died of an acute dilatation) showed a completely cicatrized ulceration of the duodenum.

The complications of ulcers can easily be diagnosed as long as the presence of an ulcerative process is established.

I have had two cases of acute perforation of a duodenal ulcer operated on. In both cases the diagnosis was easy as the combination of a typical history with the symptoms of a perforative peritonitis pointed the way. One of the patients recovered, the other one, a man of 73 years, died of heart failure on the third day.

Slow perforation of an ulcus was seen in three cases; one, in which the perforation of a pyloric ulcer had led to formation of an air-containing subphrenic abscess, died a few hours after he had been seen; in another case in which the ulcus had not produced any typical symptom, fever persisted for several weeks until an acute perforation forced surgical treatment on the case; he died about 10 days after the intervention, of sepsis. A third case, in which the perforation had probably taken place into the pancreas, was treated conservatively and has been free from symptoms for the last two years.

A rare complication was seen in one case; a woman of 55 years, who had presented the symptoms of a gastric ulcer, was suddenly taken with a chill, fever, leukocytosis and tenderness over the epigastrium persisting for several days. At operation a phlegmon of the stomach was found and a resection of the stomach attempted, but the sutures did not hold in the inflamed tissue, the gastric juice escaped into the peritoneal cavity, digested one of the large blood vessels and the patient finally died of hemorrhage.

The combination of ulcus duodeni with tetany was seen in one case; at the time of the observation she had symptoms of pylorospasm combined with typical tetanic seizures. Operation was advised and will be carried out very shortly.

The transformation of an ulcus into a carcinoma was observed three times. In one case a typical carcinoma was found to have originated from an old ulcus, in two other cases gastroenterostomy had been performed for two typical ulcus tumors at the pylorus; glands resected at the operation failed to show any sign of malignancy. In both cases carcinoma began to develop some months afterwards and both succumbed very shortly.

From my observation I am inclined to believe that the dangers of a malignant degeneration of an ulcus have been very much overrated.

The differentiation of ulcus from carcinoma of the stomach does not present very great difficulties in the vast majority of cases, but under certain conditions, especially if an ulcus-tumor can be palpated, the diagnosis meets with unsurmountable difficulties. Under these conditions I rely most on the almost constant presence of occult blood in carcinoma, whilst in an ulcus it occurs only periodically. The constant appearance of a gramm-positive flora in the stools is strong evidence in favor of a carcinoma, but in most of the cases the differentiation has to be carried out by means of an X-ray examination.

Looking over the clinical picture of ulceration one cannot help being impressed by the similarity of certain phases with the symptom-complex presented by other inflammatory lesions of the abdomen. Very frequently such a focus causes symptoms entirely localized in the stomach with a perfect mimicry of ulceration. Hyperacidity, hunger-pain, pylorospasm and even hemorrhage are frequently the expression of an inflamed appendix or an infected gall-bladder. Removal of the focus of infection is followed by complete recovery.

The similarity of symptoms in my opinion points to a similar pathology. There cannot be any question that in such attacks the foundation for an ulceration is laid. We have come to look upon ulcer of the stomach as a secondary disease (Sweite Kraukbeit, as Roessle expresses it). An irritation set up somewhere, most frequently in the appendix and in the gall ducts, leads to a localized spasm in the stomach wall. This spasm is brought on by the irritation of the autonomic nervous system; as a matter of fact almost every case of ulceration presents the stigmata of a hypersensitive vegetative nervous system as shown by v. Bergmann and his pupils. This spasm, frequently seen during the X-ray examination, leads to local ischemia by the compression of the blood vessels. The anemic area in the mucosa is attacked by the stomach juice and digested; in this way an ulceration takes its origin and finally becomes a chronic ulcer.

This theory makes us understand why the lesions of ulcer are so hard to heal. When after resection of an ulcer another defect originates in the same locality, when after intermissions of six to eight years without any symptom the signs of ulcer return, we can be sure that the same cause has led to a new localization of the old affection.

It is clear that neither surgical nor medical treatment can be fully successful, as long as they treat only the result and not the cause of the disease. In which way medicine and surgery is going to make use of the new facts in the pathogenesis of ulceration, we hope to hear in the following papers.